

The combination of awnless to short-awned glumes and distinctly awned lemmas was not found in groups examined having slender culms and small spikes (e. g., *E. virginicus* var. *halophilus*).—HAZEL M. SCHMOLL, Field Museum, Chicago, Illinois.

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## SOME NEW PLANTS FROM TEXAS<sup>1</sup>

V. L. CORY

**POLYGONELLA Parksii** sp. nov., planta annua viridis levis; caule gracile basi simplice supra valde ramoso 60–160 cm. alto; foliis ad 8 mm. longis filiformibus ad anguste ovatis, laminis latioribus grosse sinuate dentatis; ochreis viridibus ad apicem pallidis 4–8 setis pallidis vel brunneis 2–3 mm. longis munitis; sepalis deinde contractis patentibusque achaenium pallidum 2 mm. longum apertis.

Root annual, the plant appearing as a rosette in January, beginning to bloom the first of June, and continuing in bloom till the first of October; stem slender, simple below, copiously branched above, terete, smooth, 60–160 cm. tall, and up to 4 mm. in diameter; branches green, terete, mostly 1–2 mm. in diameter, bearing both foliage and flowers; leaves smooth, up to 8 mm. long, filiform to linear-spatulate or narrowly ovate, the wider blades sinuately and coarsely toothed, the lower half narrowed and jointed to the ocreae near its top; ocreae green, distally pale, lacerate with 4–8 pale to brown bristles, which are usually 2–3 mm. long; flowers borne in spike-like racemes, some flowers being sessile or subsessile, the others short-pedunculate; peduncles slender, wiry, mostly branched, the pedicels short, up to 3 mm. long, mostly spreading to recurved; ocreolae imbricated; calyx 5-parted in early bloom with the 2 outer sepals shorter but similar to the 3 inner sepals, which are about 3 mm. long, all 5 sepals changing as the fruit develops, the 2 outer sepals spreading or becoming reflexed and almost minute in size, the 3 outer sepals becoming shorter, broader, papery, prominently dark-nerved and concealing the achene or with the styles only exerted, then shrinking to half the length and nearly half the breadth of the achene, finally spreading to completely disclose achene, or eventually deciduous; achenes light-brown, narrowly winged on angles, fully 2 mm. long, and 1.2–1.4 mm. broad.—TYPE SPECIMEN, No. 15500, is deposited at the Gray Herbarium. It was collected September 25, 1935, in northern Atascosa County, TEXAS, along State Highway No. 66, at about twelve miles north of Pleasanton, where it was growing in a flat between two ridges, a former valley between two dunes.

It occurs only where the sand has been disturbed, either by the wind, the plow, or in road grading, the last circumstance being the case at

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the type locality, where the newly located State Highway No. 66 has opened up virgin areas. Its known distribution is the Carrizo sand ridges of the counties of Atascosa and Wilson, the extreme separation of collection-localities being about thirty miles. This plant is named for its discoverer, my friend and coworker, Mr. H. B. Parks, who is in charge of the State Apicultural Research Laboratory, near San Antonio, Texas.

Of the species of *Polygonella* occurring in the United States this plant appears to be more closely related to *P. ciliata* Meisn. Among other characteristics our plant differs from that species in its shorter and broader leaves, its shorter achene, and in its achene being wholly exposed at maturity.

**SISYMBRIUM texanum**, sp. nov., planta annua vel biennis glabra ad 25 cm. alta; foliis pinnatifidis petiolatis plerumque 5 cm. longis segmentis obtusis, petiolis exauriculatis; pedicellis plerumque 4-7 mm. longis valde divergentibus; capsulis sessilibus vel subsessilibus, ad 4 cm. longis 1.5 mm. latis.

Plant annual, possibly biennial, from a long taproot, which is up to 5 mm. in diameter at the crown; stem branched at or close to the base, the branches spreading-ascending, smooth, terete, finely striate, 15-25 cm. long, and usually less than 3 mm. in diameter; leaves irregularly and deeply pinnatifid, petioled, mostly about 5 cm. long, the blade 3 times as long as the petiole; leaf-segments mostly obtuse; petioles not auriculate; upper leaves similar, somewhat reduced, the lobes narrower; sepals smooth, spatulate to oblong-obovate, 4 mm. long, scarious-margined; petals white, 5 mm. long, the claw as long as the blade; filaments slender, dilated at the base, about 5 mm. long, or slightly exceeding the petals; anthers apiculate, about 2 mm. long, recurved; stigma subentire; in fruit the inflorescence occupies three-fourths of the stem; pedicels widely divergent, mostly 4-7 mm. long; pods spreading or ascending, smooth, sessile or subsessile, up to 4 cm. long and 1.5 mm. broad, beaked by style 1-2 mm. long; seeds minutely pitted, flattened, ovate, 1.5 mm. long and 1 mm. broad.

TYPE SPECIMEN, No. 18564, is deposited at the Gray Herbarium. It was collected April 13, 1936, on the narrow flood-plain of Terlingua Creek, at about 18 miles on an airline north of Terlingua, TEXAS.

This plant is related to *Sisymbrium auriculatum* A. Gray, and, among other particulars, differs therefrom in being entirely smooth, in that the petioles are not lobed at the base, and in the shorter pedicels.

**SAXIFRAGA Reevesii**, sp. nov., planta perennis basi cormiformi; scapo 15-25 cm. alto virescente deinde purpurascens plus minusve glanduloso-piloso; foliis rosulatis ca. 3 cm. longis 10-15 mm. latis

ovalibus basi spathulatis, floribus 4 mm. latis breviter pedunculatis dense cymulosis cymulis 3-5-floris; petalis albidis spathulato-obovatis ad 4 mm. longis 1.25 mm. latis; carpellis 3, deinde purpurascens.

Plant perennial, scapose from a corm-like rootstock; scape 15-25 cm. tall, 1-2 mm. broad, greenish, becoming purplish, glandular-pilose, sometimes sparsely so; leaves basal, mostly 10 or more, mostly about 3 cm. long and 10-15 mm. broad, oval and with a spatulate base which is as much as 3 mm. broad and  $\frac{1}{4}$  to  $\frac{1}{3}$  as long as the blade, glandular-ciliate especially towards the base, otherwise smooth, entire to undulate or irregularly and obscurely dentate; inflorescence cymose, compactly clustered, the branches as much as 1 cm. long before dividing into branchlets and subtended by linear-lanceolate bracts which are 4-6 mm. long, each branchlet and each flower subtended by a similar bract; flowers short-pedicellate and short-pedunculate, in compact clusters of 3-5, terminating the branchlets, mostly about 4 mm. broad; petals white, spatulate-obovate, up to 4 mm. long and 1.25 mm. broad, exceeding the calyx by about 1 mm.; calyx 2.5-3.5 mm. long; calyx-lobes erect, about half as long as the calyx-tube, ovate, obtuse, reddish or purplish at maturity; stamens 10, with filiform filaments; ovary nearly free from the calyx; carpels normally 3, 2-celled, united at the base, the tips widely divergent and becoming purplish.

I take pleasure in naming this plant in honor of its collector, Dr. R. G. Reeves, Professor, Department of Biology, A. & M. College of Texas, College Station, Texas. TYPE SPECIMEN No. 21047 was collected February 19, 1937, near College Station, Brazos County, TEXAS, by Dr. Reeves, and it is deposited at the Gray Herbarium. This plant grows in central and eastern Texas on Lufkin soils, commonly in open places or in old and abandoned fields.

This plant differs from other species of the genus in that it normally develops 3 follicles instead of 2. In other respects it is somewhat intermediate between *S. texana* Buckl. and *S. virginiensis* Michx., but possibly nearer the former, from which it differs in the other respects that its scape is glandular-pilose and its foliage is glandular-ciliate, at least towards the base. Its peculiarity in fruiting is sufficient to set it apart as a distinct species.

ASTRAGALUS **terlinguensis**, sp. nov., planta annua; caule basi ramoso ramibus ad 30 cm. longis strigosis; foliolis ca. 19 ovalibus ellipticis vel obovatis ad 1 cm. longis 3 mm. latis utrinque strigosis; racemis 2-6-floris; corollis 8-9 mm. longis apice purpureis; leguminibus confertis glabris turgidis adscendentibus 10-12 mm. longis 3 mm. latis leviter arcuatis, sutura inferiora sulcata.

Plant annual; stem numerously branched and rebranched at the base, the branches spreading, decumbent, or prostrate, 15-30 cm.

long, less than 2 mm. broad, strigose, striate; leaves ascending or somewhat spreading, 2–4 cm. long, the rachis strigose; stipules lance-subulate, about 4 mm. long, sparsely ciliate; leaflets 15–21, not infrequently 19, oval, elliptic, or obovate, up to 1 cm. long and 3 mm. broad, retuse, truncate, or rounded at the apex, strigose on both surfaces; peduncles 1.5–3 cm. long; racemes very short, 2–6-flowered; bracts lance-subulate, 1–2 mm. long; calyx strigose; calyx-tube 2.5 mm. long; calyx-teeth subulate, 2.5–3 mm. long, or as long as or longer than the calyx-tube; corolla purple-tipped, 8–9 mm. long; pod glabrous, turgid, ascending, 10–12 mm. long, 3 mm. broad, slightly and evenly arched, sulcate on the lower suture, containing 10 or more seeds, usually crowded in compact clusters of 3 or more.—TYPE SPECIMEN, No. 18584, collected April 13, 1936, in the narrow floodplain of Terlingua Creek about two miles above the mouth of Alamo de Caesario Creek and about eighteen miles on an airline north of Terlingua, TEXAS, is deposited at the Gray Herbarium.

This plant, while closely related to *A. Nuttallianus* DC. and, in the past, apparently referred to that species, differs from it and others closely related in that group sometimes segregated as the genus *Hamosa*, in its short, crowded, ascending pods. Apparently it occurs over the watershed of Terlingua Creek, hence its specific name. Over much of the large extent of Brewster County, nearly 3,800,000 acres, its kindred species is *A. Emoryanus* (Rydb.) Cory. The latter species recently has been shown by Dr. F. P. Mathews, in charge of the Loco Weed Laboratory of the Texas Agricultural Experiment Station at Alpine, Texas, as being toxic to livestock. If opportunity affords the species described herewith will be tested as to possible toxicity to livestock.

GAURA FILIFORMIS Small, var. **Munzii**, var. nov., ab var. typica differt hypanthio sepalis patente pubescentibus, pilis ca. 1 mm. longis.

Plant biennial or perennial, 75–100 cm. tall, diffusely branched above, the branches slender, spreading-ascending; stems terete, up to 5 mm. in diameter, pubescent below with appressed or incurved hairs, becoming hirsute above; leaves numerous, linear-lanceolate, entire or finely serrate, mostly 2–4 cm. long and 7 mm. broad or less, strigose on both surfaces; inflorescence paniculate; panicle up to 15 cm. long and 5 cm. broad; buds densely villous; sepals about 10 mm. long, densely villous, the hairs about 1 mm. long; hypanthium about 8 mm. long, villous, the hairs about 1 mm. long; petals pink, at least in age, obovate, clawed, 7–8 mm. long; anthers linear, 4 mm. long; fruit 8–9 mm. long, subsessile, or with stout terete base less than 2 mm. long, sharply 4-angled, the wings not auricled, at first densely villous, becoming somewhat glabrate in age, but always, even at full maturity, at least strigillose, and sometimes with scattering villous hairs.—

TYPE SPECIMEN, No. 20179 was collected September 17, 1936, in the Coastal Prairie region of TEXAS, in Chambers County, about 6½ miles north of High Island. The type is deposited in the Gray Herbarium, and cotype material is deposited in the herbarium of Pomona College, Claremont, California. The other collection known is my No. 11399 from 6½ miles south of Alvin in Brazoria County, TEXAS, also in the Coastal Prairie region, but about fifty miles westerly of the type locality.

This variety differs from the typical form of the species in that the pubescence of the sepals and hypanthium is spreading instead of appressed; and it differs from an unpublished variety of Dr. Munz in that the pubescence of the sepals and hypanthium is about 1 mm. instead of less than 0.5 mm. long, and in that the hairs are not gland-tipped. This variety is named in honor of Dr. P. A. Munz, my friend, in recognition of his prompt and sympathetic assistance to us in our studies of the groups of plants in which he is especially interested.

PHLOX DRUMMONDII Hook., var. **littoralis**, var. nov., planta annua; ramibus adscendentibus diffuse patentibus ad 60 cm. longis vix 1.5 mm. crassis; floribus paucis laxè dispositis.

Plant annual; stem branched at base and above, the branches ascending and diffusely spreading, up to 60 cm. long and less than 1.5 mm. thick; flowers few and not crowded together in cymose clusters; pubescence, leaves, and floral and fruiting characters similar to the species.—TYPE SPECIMEN, No. 20393, was collected May 19, 1936, at one and three-fourths miles southwest of Aransas Pass, in San Patricio County, TEXAS, where it occurred in some abundance growing more or less in the shade of trees well within a quarter mile of the shore. This number, and No. 20574, collected May 20, 1936, at Flour Bluff, below Corpus Christi in Nueces County, where it was growing more exposed to the sun and closer to the shore, are deposited at the Gray Herbarium.

The growing plant does not suggest the species, the differences being in the elongated, slender, spreading stems, and in the few flowers, which are disposed singly or in twos or more instead of being crowded together in cymose clusters. The individual flower, and the fruit as well, is that of the species, hence this seemingly distinct plant appears to merit no more than varietal distinction. This plant has been found only along the Gulf Coast of Texas, both above and below Corpus Christi, hence the varietal name.

PECTIS **texana**, sp. nov., planta annua 10–15 cm. alta; caule basi dichotomo-ramoso; foliis linearibus 2 cm. longis 1 mm. latis basi setosociliatis setis 4–6; capitulis pedunculatis solitariis vel paucis (2–4);

pedunculis gracilibus 4-30 mm. longis longioribus monocephalis; floribus disci 3 mm. longis tubo corollae breve; achaeniis ca. 3 mm. longis hirsutulis; pappo coroniformi aristatis, aristis plerumque 2 mm. longis; achaeniis disci plerumque 1-aristatis, achaeniis florum ligularum 3-aristatis.

Plant a diffuse, glabrous annual, divided at the base into several slender branches, which are branched in turn, the branchlets terminating in an inflorescence, forming a low (10-15 cm. high) growth which is covered in the blooming season by numerous small heads of showy, yellow flowers; leaves opposite, linear, apiculate, about 2 cm. long and 1 mm. wide, dotted on the margins by more or less regularly spaced, prominent sunken glands, midrib impressed above, prominent below, rounded and pale, the body of the blade green, punctulate, the margins involute, near the base bristly-ciliate with 4-6 soft, scarious lobes or bristles, which are about 2 mm. long; heads small, axillary, pedunculate, in clusters of 1-4; peduncles slender, 4-30 mm. long, the longer peduncles bearing solitary heads; involucre turbinate, 4-4.5 mm. high, 2-3 mm. broad; involucre bracts in 1 series, usually 8, narrowly linear, strongly involute and round-ribbed, with a conspicuous apical gland; ray-flowers about 8, ligule elliptical-oblong, about 4 mm. long and 2.5 mm. broad, the basal portion, sparsely glandular with stalked glands; disk-flowers about 12, the corollas 3 mm. long, the corolla-tube short, one-third the length of the throat and limb, sparsely glandular with stalked glands; achenes slender, terete, 3 mm. or slightly more long, grayish, hirsutulous; pappus a paleaceous crown with 1 or more awns, the awns mostly 2 mm. long or more, the disk-achenes usually with 1 awn and the ray-achenes with 2-4 awns, usually 3.—TYPE SPECIMEN, No. 15382 was collected at the Ranch Experiment Station near the southern line of Sutton County, TEXAS, August 7, 1935, and is deposited at the Gray Herbarium.

At first this plant was determined for me by one botanist as *P. tenella* A. Gray. Until a ranchman sent in material for determination because of the belief that it was toxic to livestock it was so considered, but then it was seen not to fit that species. Later the material was determined elsewhere as *P. angustifolia* Torr., but clearly it is not that species. It is nearest *P. tenella*, but differs in that the heads are larger, fewer, longer-pedunculate, and that the awns of the pappus are less well-developed, and in that a fringed pappus-cup always is more or less evident. In habit this plant is most like *P. papposa* Harv. & Gray of the Big Bend of Texas and on westward and southward. As we know this plant it is found only on the Edwards Plateau of Texas, and there it is confined to a belt extending from near Rock-springs on the south to near Christoval on the north. We know it

only as growing on stony clay soils, frequently on solid limestone shelves covered with a thin layer of soil, or frequently growing in cracks of the solid exposed limestone rock. This plant is an attractive one when in full bloom, whereas most of the other species of *Pectis* in Texas cannot readily be so considered.

TEXAS AGRICULTURAL EXPERIMENT STATION,  
Sonora, Texas

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GRASS STUDIES. II. ADDITIONS TO THE  
FLORA OF ARKANSAS<sup>1</sup>

ETLAR L. NIELSEN

AN extensive survey of the grass flora of Arkansas was undertaken during the summer of 1936. Eight of the species represented in the collections are not recorded in Hitchcock's Manual (1935) as occurring in this state. Brief note is therefore made of the extension of range of these species.

*ERAGROSTIS REFRACTA* (Muhl.) Scribn. Five miles west of Rosston, Nevada County. Sept. 9, 1936. *Nielsen* no. 4387.

*FESTUCA VERSUTA* Beal. Rocky woods. Edens Bluff, about 8 miles southeast of Rogers, Benton County. May 30, 1936. *Nielsen* nos. 3772 and 3780.

*AGROPYRON SMITHII* Rydb. Roadside,  $\frac{1}{4}$  mile north of Dairy Building, University of Arkansas, Fayetteville, Washington County. July 1, 1936. *Nielsen* no. 4039. A dense colony of this species has become established on the shoulder of the highway. Scattered individuals of *A. REPENS* (L.) Beauv. (June 30, 1936. *Nielsen* no. 4030) occur along a fenceline in the same locality. No dense colonies of this species were found either here or at the University Experimental Farm located about 2 miles farther north. The species last mentioned is not new to Arkansas.

*BRACHYELYTRUM ERECTUM* (Schreb.) Beauv. Woods, Pulaski County. July 1884. *F. L. Harvey*; Wooded banks, Crowley's Ridge near Wynne, Cross County, Sept. 9, 1926. *E. J. Palmer* no. 31667; Fayetteville, Washington County. Oct. 1933. *D. M. Moore* no. 33084; Moist woods, Devils Den State Park, near Winslow, Washington County, May 31, 1936. *Nielsen* no. 3806; same locality, Aug. 1, 1936. *Nielsen* no. 4331; also gorge one mile west of Weedy Tower, U. S. F. S., Ozark National Forest. Aug. 2, 1936. *Nielsen* no. 4344. Branner and Coville (1891) accredit Nuttall to have originally reported this species for the state.

<sup>1</sup> Research Paper No. 463. Journal Series, University of Arkansas.